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Editorial

Fast fashion and environmental consciousness

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ABSTRACT

The tremendous growth of fast fashion industry has significantly exacerbated environmental and social challenges worldwide. Fast fashion, has emerged as a major contributor to global pollution due to the swift production of low-cost garments that reflects current trend. It accounts for nearly 10% of global carbon emissions which has surpassed even the combined effect of aviation and maritime sectors and generates approximately 20% of industrial wastewater from textile dyeing. Moreover, the industry produces over 92 million tons of textile waste yearly, a figure expected to escalate to 134 million tons by 2030. This waste, commonly non-biodegradable, predominantly pile up at landfill sites or is dumped in less developed areas, posing severe human health and ecological risks. Taking the problem into consideration, the article examines different types and sources of textile waste produced across pre-consumer, post-consumer, and production processes, including defective goods, deadstock and worn-out fabrics. Disposal methods like landfilling and incineration intensifies pollution issues through soil, water and air contamination. Although, the mechanical and chemical recycling technologies are available, their use is still restricted. To address these pressing concerns, the article advocates for sustainable alternatives such as second-hand markets, clothing donations, upcycling, and recycling initiatives. The promotion of organic textiles, less polluting production practices, and conscious consumer behaviour are also emphasized. Furthermore, adoption of circular economy principles and advanced recycling technologies should also be envisaged.

1. Introduction

1.1 Fast fashion: A buzz word or Reality

"Fast fashion" is a term which refers to garments produced with cheap materials that recreate the contemporary catwalk styles and are expeditiously brought to market to capitalize on latest trends. This framework involves rapid production, distribution, and marketing of design, allowing retailers to tender a vivid variety of fashion products at low cost. The global demand for fashion has escalated to the extent that fashion industry has become responsible for 10% of global carbon emissions, generating more greenhouse gas emissions as compared to the aviation and shipping sectors combined. It additionally,

generates approximately 20% of global wastewater from textile dyeing thereby producing around 92 million tons of textile waste annually, which is expected to reach 134 million tons by the year 2030 (UNEP). This waste, mostly non-biodegradable, either ends up in landfills or is dumped in less developed countries. The fast fashion business model exacerbates this issue by relying on cheap, quickly produced clothing to meet ever-changing trends. Although some companies commit to achieve net zero emissions by the year 2050, most business sectors have not addressed their environmental impact. Hence, the waste generated from fashion industry significantly influence the environment and human health, thereby

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underscoring need for sustainable ventures and affirmative solutions.

1.2 Textile waste: A matter of concern

A serious threat is posed to the environment due to the release of pollutants from textile wastes besides their contribution to resource depletion. Such wastes impose a stress on landfills and contaminates water with xenobiotics such as, dyes, detergents, fabric materials etc. The social impact of such wastes is landed upon the communities often situated in the area of production regions making them put up with economic diminution as well as health risks. Unscrupulous labour practices augment issues related to social justice. Economically, the inefficiency of the fashion industry promotes thrift behaviours, restrain sustainable growth and eternize a cycle of environmental and social impairment.

As of today, an annual production of 97 million tons of waste is recorded from the fashion industry, comprising 18 Mt of leavings, 2.5 Mt of synthetic components, and 3 Mt of wrapping and casing materials. The rise of fast fashion exacerbates these environmental issues. Regional disparities exist, with some areas reporting disproportionately high waste production. The Fashion industry's growing environmental footprint marks the importance of superscribing the real time statistics and an instantaneous action towards sustainable approach.

Waste generated from fashion industry give arise to local, social and environmental issues, which may include byproducts of manufacturing, unsold items, offcut oddment of fabric, and left over disposal from end consumer.

2. Waste generated by Consumer

Textile waste generated under Pre-consumer category consists of mass- production of oddments, leavings, and unconsumed backlog arising during the primary stages of manufacturing. For example, snippets from cloth cuttings and unpurchased garments resulting from excess production. This waste significantly impacts the environment by overburdened landfills and resource depletion, underscoring the requirement for sustainable approach for production.

Ever emerging swing and mania in Fast fashion industry leads to generation of products having a short life cycle which eventually leads to use and throw psychology among end users and such discarded clothing adds to textile waste attributed to post-consumer rage. A significant challenge in recycling this waste is the mixed composition of materials. In order to manage the discarded textile goods donation of garments should be encouraged which is likely to promote sustainable consumption of goods besides working on the state-of-the-art technologies for biodegradable fabrics and recycling.

2.1 Obsolete textile stuff

The spare stock left due to excess production and/or swinging style choices leads to piling of obsolete textile stuff also called as deadstock. The accumulation of deadstock results from excessive manufacturing and market changes. This leads to wasted energy and resources, adversely impacting the environment. Mitigating strategies include repurposing through upcycling, donating, and implementing effective inventory management to diminish overproduction and subsequent disposal.

2.3 Defective and extra stocked goods

Misprint fabrics and excess stock or goods is consequence of inaccurate manufacturing estimates as well as swaying consumer likings. These items contribute to resource waste and disposal challenges. Sustainable alternatives to lower the environmental effect of extra inventory circumvents adaptive models for production, tracking inventory know-how, and collaboration with adequate organizations to reprocess extra goods.

2.4 Worn out Fabrics

Worn out garments and fabrics pose environmental challenges when discarded through traditional approach like landfills. Recycling methods are evolving to offer ecologically benign solutions. Circular economy focuses on reuse and recycle models of discarded clothing materials which stands crucial when it comes to reduction of their environmental impact. Implementing these models becomes imperative to make the fashion industry not only resource-efficient but also sustainable.

2.5 Fate of Textile Wastes

In the absence of adequate disposal and sustainable recycling practices, textile industry waste often find space in landfills, eventually leading to environmental degradation.

2.6 Dump yards and Landfills

When dumped in landfills, the textile industry wastes hinder biodegradability and exacerbates shortage of space. Synthetic fibres like Nylon, rayon etc. breakdown to releases hazardous materials, thereby polluting both soil and water. In order to lessen the impact, an ecofriendly approach for management of textile waste should be given a priority with regards to discard, recycling, and circular economy practices.

2.7 Incinerators

Textile incinerators release greenhouse gases and air pollutants, harming the environment. Combustion releases toxic substances, contributing to air pollution. To alleviate the environmental impact generated through incineration of textile waste it is essential to promote alternative disposal methods, enhance recycling technologies and utilize cleaner energy sources. Implementing these strategies could remarkably lessen the environmental impact of textile waste.

2.8 Recycling facilities

Recycling of textile waste employs either mechanical processes, like shredding and re-spinning, or chemical methods like depolymerization. Mechanical recycling retains much of the fiber's original properties whereas chemical recycling breaks down fibers into their basic building blocks to produce new materials. Both techniques are effective in minimizing waste, conserve valuable resources, and promote a sustainable, circular fashion industry.

3. Donations and secondhand markets

Donation of used clothes and engaging in second-hand markets could help extend the lifespan of apparels and promote sustainability. Reusing of clothes not only reduces the textile waste but also supports community initiatives and reduces the environmental burden of generating new clothing. Following these habits can foster more mindful and eco-friendly fashion consumption

4. Upcycling and repurposing

Upcycling and repurposing textiles involve creative transformation of discarded fabrics into aesthetically valuable products. This sustainable approach contributes toward development of circular economy by alleviating waste generation and conserving limited natural resources. The application of such innovative practices within the fashion industry not only enhances the environmental sustainability but also strengthen more responsible and thoughtful consumption practices.

5. Innovative Solutions for addressing textile industry waste: A Sustainable way ahead

Novel approaches are necessary to address waste produced by the textile and retail industries, Recycling technologies, circular economy models, and conscientious consumer behavior can all contribute towards a sustainable future.

5.1 Advantage of advocating handed-down Clothing

Promoting used clothing extends the life cycle of garments and reduces fashion waste, thereby lessening environmental impact. Supporting local thrift stores and embracing online resale marketplaces enhance sustainable consumption. By choosing second-hand goods, consumers support a circular economy and mitigate the environmental effects of fast fashion.

5.2 Promoting purchase of recycled clothing

Promoting the purchase of recycled apparel is essential for reducing resource consumption and minimizing environmental impacts. Recycling processes transform textiles into stylish, new clothing. Effective campaigns can dispel myths and emphasize the practicality of recycled fashion. Choosing recycled apparel supports a more ethical and environmentally conscious fashion industry, aligning with sustainability goals.

5.3 Prefer Organic textiles and clothing at individual level

Buying organic apparel aligns with ethical and environmental values. Organic farming techniques protect ecosystems, promote soil conservation, and reduce pesticide use. Look for trusted certifications like GOTS (Global Organic Textile Standard) when purchasing organic clothing. Opting for organic apparel supports sustainable agriculture, which benefits both the environment and society in the long run.

5.4 Spreading awareness for Sustainable Production Methods

Fashion labels should focus on sustainable production by utilizing eco-friendly materials, conserving energy and water, and adopting circular economy principles. Ethical production plays a vital role in responsible fashion consumption. Seek out labels that are transparent about their sourcing and suppliers to ensure they match your values. Supporting sustainable brands can be affordable by discovering styles within your budget that embrace eco-friendly practices.

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